

Appl. No. 10/086,617
Amdt. Dated Nov. 10, 2003
Reply to Office Action of Aug. 13, 2003

REMARKS

Claim Rejections under 35 U.S.C. 102

Claims 9-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (US 6,404,943). Examiner in the Office action states that Wang discloses an optical device with two input fibers and two output fibers (Fig. 2B); at least two waveguides, each comprising two parallel reflecting surfaces; wherein when a movable switch element is not interfering with the optical path of the input waveguide, the light beam is transmitted to the output waveguide that is arranged diametrically, and when the switching element is in the optical path, the light from the input waveguide is output to the neighboring output waveguide via reflecting surfaces.

In response to this rejection, Applicants have amended independent claims 9 and 12, adding more limitations therein which define over the prior art cited by Examiner.

Regarding claim 9, the present invention discloses an optical switch comprising at least two input fibers and output fibers, and "each of the input optical fibers is coupled to a different one of the output optical fibers when the optical switch changes between at least two positions". However, Wang's optical switch fails to provide multi-channel switchable communication between input and output fibers. As disclosed in Figs. 2A-2C of Wang, the switch only connects two input optical fibers 11, 14 to corresponding output fibers in the position shown in Fig. 2B. In the positions shown in Figs. 2A and 2C of Wang, only one of the input fibers is connected to the corresponding output fiber. The other input fiber is terminated (see column 4, lines 40-43), thus signals from this input fiber are lost. Therefore, Wang fails to disclose an optical switch having at

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least two input fibers, wherein *each input fiber is connected to a different output fiber when the optical switch changes between at least two positions*. Applicants assert that the structure and function of the present invention is very different from Wang, and that claim 9 is novel over this reference.

Regarding claim 12, the present invention discloses a **multi-channel optical switch**, which provides multi-channel switchable communication between the input ports and the output ports, i.e., *multiple communication paths respectively occurring on multiple channels simultaneously*. However, Wang fails to disclose such a multi-channel optical switch. Wang's switch only connects more than one input port to corresponding output ports in one instance (see Fig. 2B). In other instance, Wang's switch only connects one input port to the output port, while the other input port is terminated (see Figs. 2A, 2C). Applicants assert claim 12 is clearly different from and novel over Wang.

Therefore, independent claims 9 and 12 are patentable under 35 U.S.C. 102 over Wang, and all their corresponding dependent claims should also be patentable.

Claim Rejections under 35 U.S.C. 103

Claims 9-17 are rejected under 35 U.S.C. 102, and this rejection is traversed as above. Applicants further assert that claims 9-17 are also patentable under 35 U.S.C. 103 over Wang, as follows.

Regarding claim 9, as asserted above, Wang fails to disclose "each of the input optical fibers is coupled to a different one of the output optical fibers when the optical switch changes between at least two positions,". Wang's optical switch only connects input fibers with output fibers in one

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position (see Fig. 2B), and connects only one input fiber with the output fiber in other positions (see Figs. 2A, 2C). Wang's switch results in undesirable loss of signals from the unconnected input fiber. However, the present invention overcomes the above shortcoming of Wang. A person of ordinary skill in the art could not have derived the optical switch of the present invention from Wang. Thus, claim 9 is unobvious over this reference.

Regarding claim 12, Wang also fails to disclose a multi-channel optical switch which avoids the shortcoming of signal loss. The present invention provides more efficient switching and new results quite superior to Wang. Thus, claim 12 is unobvious over this reference.

Therefore, independent claims 9 and 12 are patentable under 35 U.S.C. 103 over Wang, and all their corresponding dependent claims should also be patentable.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang.

In response to this rejection, Applicants have amended independent claim 5, adding more limitations therein which define over the prior art cited by Examiner.

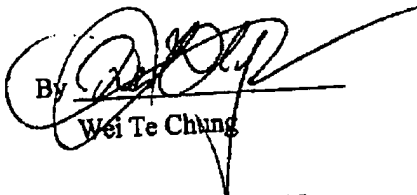
Regarding claim 5, Wang fails to disclose an optical switch, wherein "the light signals of each of the input fibers are transmitted to different of the plurality of output fibers when the switching element is at different of the three positions." As asserted above, the present invention overcomes the signal loss shortcoming of Wang, and provides more efficient switching. Therefore, claim 5 is unobvious over this reference, and dependent claims 6-8 are also unobvious over the reference.

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In view of the above remarks, the subject application is believed to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,

Wu et al.

By 
Wei Te Chung

Registration No.: 43,325

Foxconn International, Inc.

P.O. Address: 1650 Memorex Drive, Santa Clara, CA 95050

Tel. No.: (408) 919-6137